PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	)	Confirmation No.:	**7183**
ARTLEY et al.	)	Examiner:	**Boyd, Jennifer A.**
Serial No.: **10/022,959**	)	Art Unit	**1771**
Filed: **December 18, 2001**	)	Docket No.:	**T117 9001**

For: **POLYETHYLENE GLYCOL SATURATED SUBSTRATE AND METHOD OF MAKING**

DECLARATION UNDER 37 C.F.R. 1.131

I, John W. Artley, of 4 Park Avenue, Apt. 10-R, New York, NY state the following as true:

1. I am one of the co-inventors of the claimed subject matter in the above-referenced application.

2. The present application relates to a method of manufacturing a polyethylene glycol treated fabric. The method includes exposing a fabric to a polyethylene glycol formulation having both an acid catalysis and a resin. The treated fabric is then heated and cured to initiate a catalytic reaction for bonding the polyethylene glycol formulation to the fabric. The bonded fabric is then washed or neutralized to a pH of between about 6.5 and about 7.5 and then dried.

3. I conceived the claimed subject matter in the present application prior to the effective date of U.S. Patent Number 6,617,268, or before July 7, 1999, coupled with due diligence from the conception date to the constructive reduction practice date or the filing date the provisional application filed December 21, 2000 from which the present application claims priority.

4. Photocopies of materials and documents supporting the above specified conception date are attached as *Exhibit* 1, *Exhibit* 2 and *Exhibit* 3.

I hereby declare that all statements made herein are made of my own knowledge and are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of title 18 of the United States Code and that such willful and false statements may jeopardize the validity of the application or any patent issued there from.

John W. Artley

Feb. 21, 2006
Date

Exhibit 1, page

Technical Bulletin No. 4

Application of the Formulation; Saturation, Curing Temperatures and Oven Dwell Time

With the crosslinked polyol technology, the formulation permanently bonds to each individual textile fiber by initiating a catalytic reaction during the curing process (this physically locks the molecular structure of the polyol formulation to the fiber's surface). This is the same phenomenon that occurs when a traditional durable press (DP) finish is applied to a woven textile.

With the crosslinked polyol formulation, this bonding or "crosslinking" occurs at a relatively low temperature of between 95°C/203°F and 105°C/220°F. All curing temperatures should be measured or read directly from the surface of the textile; an overall average ambient oven temperature reading should not be utilized. The surface temperature of the textile is to be heated as quickly as feasible; preheating the textile surface before entering the curing oven should be considered. Temperatures on the surface of the textile (when saturated with formula) in excess of 109°C/229°F may, under some circumstances, scorch or yellow the textile.

An absolutely critical element of the polyol finishing process is determining the precise surface temperature at which point the catalytic reaction takes place for each individual textile-type and basis weight. This temperature point will be somewhere between the temperature range discussed above. Trial and error is used to determine the optimum surface temperature required for each individual textile. If the textile surface temperature required to initiate the catalytic action is not reached, the formulation will not properly bond to the fiber structure. This will result in either a reversal of the actual process itself and/or formulation wash out.

The actual formula application process involves three distinct and separate steps. The first step is to saturate the textile structure with the specific crosslinked polyol formula selected for that textile given its intended end-use and desired performance characteristics. The second step is the thorough removal of excess formulation from the textile after saturation to arrive at the target wet weight

Exhibit 1, page 2

formulation add-on. The third step is curing which bonds the formula to the textile structure itself.

As previously stated, very exacting oven dwell times must be determined for each individual fabric type and basis weight. Generally, dwell times will range from under two minutes and up to five minutes for heavy, dense fabrics. Infrared monitoring of the textile surface temperature should take place at periodic intervals during the curing process.

Saturation of the Textile

Formula saturation of a textile is accomplished by one of two methods; pressure spray assemblies mounted across the web or the use of traditional finishing saturation tanks. Although generally spraying the formulation onto the surface of the textile will offer more precise application of the formulation and coating of the fibers, there is no preference of one application technique over the other as long as the textile is thoroughly saturated with the formula to the desired level of wet add-on. Foam or scrape application of the formula also have potential.

Generally speaking, wet pick-up or add-on of the formulation will almost never exceed 100% and for many applications, the target wet add-on is in the range of 70-80%. Wet add-on is application and textile dependent and several trials will be necessary to arrive at optimum levels.

[redacted]

Exhibit 2

Addendum to Technical Bulletin No. 8

Post-Curing Procedures; Washing and Drying the Textile

We have referenced a 30-minute timeline for accomplishment of neutralization as being acceptable. First, if a material contains cellulosics of any type, then the move from curing to neutralization must be immediate without exception. Where a material is all synthetic, it can probably stand substantially more than 30-minutes without adversely impacting on the material or reaction.

As you have previously been advised through updates, we know that the neutralization step can be quickly and efficiently accomplished by a one-minute soak in a one percent (1%) soda ash bath having an approximate pH of 11 with that being followed by a brief agitated rinse of no more than one minute. Again, on the second page of original Technical Bulletin No. 8 we have referenced a recommended final pH of 8.5 and it appears that a final pH of 7 to 7.5 is fine. Also, in original Technical Bulletin No. 8 we made reference to specific types of wash boxes, etc., it appears than any means of simple saturation and soaking followed by a brief rinse will serve to effectively neutralize. Final drying following neutralization can again be speeded by pre-heating or by the use of higher temperatures in early stages of drying before all the water is driven off.

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[redacted] ThermoSense Corporation, Wisconsin Global Technologies, Ltd., and Bayshore Absorbent Products, Inc.

[redacted]

Technical Bulletin No. 1

Formulation; General Comments

The crosslinked polyol formulation is inherently flexible and adaptable to a broad range of knits, nonwoven and woven textiles designed for a wide variety of end use applications. However, this inherent flexibility presents the textile finisher with a number of choices, each of which must be carefully considered before the crosslinked polyol formulation application process commences. Each "option" or choice will have an impact on the overall functionality of the treated textile (absorption performance v.s. antimicrobial properties for example). By altering differing aspects of the formulation, or adjusting the finishing process itself, such as changing the fiber blend and /or textile construction , each will individually have an impact on the performance of a finished product ready for the marketplace.

Generally, for example, napery will be treated differently than a fabric used in a textile designed as an upholstery fabric. When thermal performance is desired, a much higher molecular weight PEG would be selected when compared to the PEG used on a textile treated to highlight color retention or durability. Other variables to be considered is the amount of wet/dry formulation add-on required for a particular end use; an absorbent healthcare product might require a dry add-on of over 60% while a bed sheet where permanent press and durability are the main criteria might, for example, reqire a dry add-on of from 10% to 15%.

The basis weight of the textile also must be taken into consideration. For an absorbent adult incontinence product, a nonwoven 50/50 blend of polyester and rayon with an "airy" high loft construction might be selected with a basis weight of seven to eight ounces per square yard.

Where liquid absorption is not a requirement (say a blanket with thermal properties), the same general basis weight might be appropriate, but the formula would be different with respect to thermal ranges and the blanket might be of a woven construction.

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Bayshore Absorbent Products, Inc.
Wisconsin Global Technologies, Ltd.